The many and vast remains of ancient buildings all point, from their propinquity to old workings, to an extensive gold industry, when the means of extraction were crude as compared with modern appliances. The country gradually rises into an undulating plateau ranging from 4530 to 5000 feet above sea-level, with park-like scenery, the eastern edge breaking away into rocky gorges, supplying many tributaries to the Sabi. The water shed between this river and the Zambezi's tributaries is often very narrow; 100 yards would sometimes only separate the streams running to the two basins. There are apparently no inhabitants on this plateau south of the Hanyani, so cruelly have Matabele assegais done their work.

"The bush is thick and the land boggy at the head waters of these rivers, but beyond the Umfuli there are plains from which Mount Hampden rises, stretching away to the head waters of the Mazoe. The neighbourhood of Fort Salisbury is well wooded, and the petty tribal chiefs welcomed the English force, as promising them security. Prospectors are reporting favourably from all directions, and find old workings wherever they go."

Mr. Maund concluded by referring to the famous Zimbabye ruins, which he seems inclined to think are Phœnician, or at least early Arabian. But Mr. Theodore Bent, who spoke after the reading of the paper, was strongly of opinion that they are of Persian origin.

THE CONFERENCE OF DELEGATES OF CORRESPONDING SOCIETIES OF THE BRITISH ASSOCIATION.[1]

AT the first Conference, held on September 4, the chair was taken by Mr. G. J. Symons, F.R.S. The Report of the Corresponding Societies Committee was taken as read. Subjects of interest to the Corresponding Societies were then discussed in the order of the Sections of the Association.

SECTION A.

Temperature Variation in Lakes, Rivers, and Estuaries.—The Chairman stated that many thermometers had been distributed, and much information had been collected during the year.

Mr. W. Watts stated that he had been conducting temperature observations in two large reservoirs belonging to the Oldham Corporation, the results of which were included in the Report of the Committee.

Mr. Cushing presented a report of weekly temperature observations taken in the River Wandle, in Surrey. The temperatures were taken between 3 and 3.30 p.m. on Sunday afternoons, and extended from October 1888 to February 1889. The observations were taken at ten different stations. The records were accompanied by a statement of the mean weekly shade-temperature, and the rainfall for the previous week. The observer, Mr. F. C. Bayard, was willing to continue the work.

The Chairman stated that he had recently been reducing experiments on evaporation which had been made for several years at Strathfield Turgiss, in Hampshire, in which the ordinary small evaporators had been compared with a tank 6 feet square and 2 feet deep. Evaporation from the tank averaged 15 inches per annum, while the smaller evaporators (owing to the high temperature of the water) indicated considerably in excess of the truth.

Meteorological Photography.—Mr. Hopkinson alluded to the success which had been achieved by the Committee on Geological Photography, and pointed out the growing importance of photography in other branches of scientific research. He then suggested the appointment of a Committee on Meteorological Photography. Photography, he said, could most advantageously be applied to the investigation of meteorological phenomena, such as the forms of clouds, lightning-flashes, and the effects of storms. The Committee would collect the photographs and keep a register of them. The study of the forms of clouds would be more satisfactory if undertaken by a comparison of photographs than of drawings; methods of overcoming the difficulty of photographing light clouds in a blue sky might be investigated; and the various phenomena connected with lightning-flashes would be a most interesting field for research. Photographs showing the effects of storms should be secured as soon as possible. If a Committee were formed, Mr. Symons and Prof. Meldola would consent to serve on it, and Mr. A. W. Clayden would be willing to act as Secretary.

After some discussion, it was decided that application should be made through the Committee of Section A for the formation of a Committee on Meteorological Photography, and that the application should be supported by a recommendation from the Conference of Delegates.

SECTION C.

Sea-coast Erosion.—Mr. Topley asked assistance for the Committee investigating this matter.

Erratic Blocks.—The Rev. E. P. Knubley stated that the Yorkshire Naturalists' Union had been recording erratic blocks satisfactorily; twenty-five reports had been presented.

Geological Photography.—Mr. O. W. Jeffs stated that, through the action of the Conference of Delegates at the previous meeting of the Association, a Committee had been appointed for collecting and reporting on geological photographs. Much assistance had been rendered to this Committee by delegates from the Corresponding Societies, many of whom had sent photographs, or lists of those that had been taken. The photographs had been arranged in order to select those which illustrated well-defined strata or sections. The Report showed that many of the counties of England and Wales were as yet unrepresented, and he asked those delegates who had not yet done so to bring the matter before their Societies, and to interest photographers in the work. The object of the Committee was to secure a series of photographs illustrating the features which geologists thought best worth recording in their respective localities. The counties from which photographs had been received were: Dorsetshire, Cornwall, Devonshire, Isle of Man, Kent, Lancashire, Montgomeryshire, Nottinghamshire, Suffolk, Shropshire, and Yorkshire; there were also a few from North Wales, Scotland, and Ireland. The Yorkshire Naturalists' Union had contributed over 100. A large number of the photographs were exhibited in the room of Section C.

Prof. Bonney testified to the zeal and energy of Mr. Jeffs as Secretary to the Committee, and suggested that, when a large collection of photographs had accumulated, some of the more typical examples of geological phenomena might be enlarged for publication.

Mr. Jeffs suggested that the Committee might make arrangements with some photographer for preparing lantern-slides from the photographs for the purpose of illustrating lectures.

Mr. Wm. Gray thought that it would be an advantage if each delegate were appointed the local representative of the Committee in his own district, and authorized to collect the photographs; he would be willing to act in this capacity for the north of Ireland.

Prof. Meldola pointed out that, in taking photographs of geological sections, in which differences in the strata were often indicated only by small differences in colour, it would be an advantage to use orthochromatic plates.

The desirability was then discussed of adopting some means by which members of the British Association, and those who assisted in the work, might be enabled to procure copies of the photographs, either as lantern-slides, prints, or enlargements, and various suggestions to this end were made.

SECTION D.

Disappearance of Native Plants.—Prof. Hillhouse stated that the third Report of the Committee on this subject had been confined to the north of England, the Isle of Man, and to a few records from South Wales. The bulk of the material had been obtained directly by correspondence with the local Natural History Societies, especially the Yorkshire Naturalists' Union. Next year's Report would probably deal with the whole of Wales, and possibly adjoining counties and the south-west of England. He then gave a *résumé* of the Report, stating that it contained an account of the more or less complete disappearance from certain localities of about seventy species. In some cases the disappearance was due to natural causes, but in most to the action of man.

Mr. Hopkinson stated that nearly the whole of the ferns in his district (St. Albans) had disappeared within the last twenty years. He attributed this to London collectors and dealers, and added that there was danger of even the primrose being exterminated from the neighbourhood of London, as the roots were taken there by cartloads every year.

Mr. M. B. Slater suggested that the best plan to obtain rare plants for cultivation would be to procure a little ripe seed and to try to raise it. He had by this means under cultivation some of our rarest British plants.

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[1] Abridged from the official Report which has recently been issued to the Corresponding Societies.

Investigation of the Invertebrate Fauna and Cryptogamic Flora of the Fresh Waters in the British Isles.—The Rev. E. P. Knubley stated that a Report of the Committee for this purpose had been presented, and that the Yorkshire Naturalists' Union had been steadily working at the subject during the past year.

SECTION G.

Flameless Explosives.—Prof. Lebour stated that the North of England Institute of Mining Engineers had continued experimenting on this subject; the South Wales Society had already helped; and one or two smaller societies had promised assistance. The result of the joint work of the Committee which had been appointed would soon be published.

SECTION H.

Catalogue of Prehistoric Remains.—Mr. Kenward said that the Birmingham Philosophical Society was recording the few ancient remains in its district. He had worked himself, and had induced others to promote the suggestions made at the Conferences at Bath and Newcastle, as well as to assist in carrying out the archæological survey proposed by the Society of Antiquaries.

Mr. Gray stated that the Belfast Naturalists' Field Club had taken the matter up, and would continue to co-operate with the Committee of the Association.

The Chairman remarked upon the advantage of being able to have at hand for reference the publications of the local societies collected by the Corresponding Societies' Committee for the purpose of preparing the catalogue of papers which formed part of their annual Report, and also called attention to the fact that a few of the older and well-known local societies had not yet become enrolled as Corresponding Societies.

The Second Conference took place on September 9, Mr. G. J. Symons, F.R.S., in the chair.

SECTION A.

Temperature Variation in Lakes, Rivers, and Estuaries.—Prof. Meldola read a communication from Dr. H. R. Mill, the Secretary of the Committee, on this subject, thanking the local societies for their assistance, and stating that the work of observers who are members of such societies is, as a rule, more regular and more accurate than that of isolated volunteers. It was desirable, he said, that the societies already assisting should continue to make observations for another year with as much regularity as possible. Additional observers were not required, as sufficient data for the purposes of the Committee were in course of being secured.

Meteorological Photography.—Mr. Hopkinson reported that the formation of the proposed Committee on this subject had been sanctioned by the Committee of Section A, and that the form of application had been forwarded to the Committee of Recommendations.[1]

SECTION C.

Prof. Lebour, representing the Committee of this Section, brought under the notice of the delegates the following Committees recommended for appointment or reappointment:—

(1) *Erratic Blocks.*—The co-operation of the Corresponding Societies which had not yet taken part in the observations was invited.

(2) *The "Geological Record,"* the continuation of which had been recommended, with a grant.

(3) *Underground Waters,* of the work of which Committee the Secretary, Mr. De Rance, would speak.

(4) *Exploration of Oldbury Hill.*—A Committee had been recommended for excavating this ancient earthwork, which was near Ightham, in Kent.

(5) *Geological Photography.*—This Committee, of which Mr. Jeffs was Secretary, had been recommended for reappointment.

(6) *Northamptonshire Lias.*—A Committee for collecting and registering the fossils of this formation had been recommended for appointment, and excavations had already been commenced.

(7) *Sea-coast Erosion.*—This Committee had been recommended for reappointment.

(8) *Registration of Type-Specimens.*—A recommendation had been sent in for the appointment of a Committee for reporting on type-specimens in museums, an important subject, in which great assistance might be rendered by local societies.

(9) *Earth Tremors.*—This Committee had been recommended for reappointment, with Mr. Davison as Secretary.

(10) *Exploration of Elbolton Cave.*—A Committee had been recommended for the exploration of this cave, which was near Skipton, and in which relics of human occupation had already been found.

(11) *Source of the River Aire.*—The object of the Committee, recommended for appointment for the purpose of investigating this question, was to ascertain, if possible, by means of the coal-tar colouring-matter, fluoresceïn, whether the water which flows out of Malham Tarn and disappears down a "water-sink" to the south of the tarn, is the stream which emerges at Malham Cove or Aire Head, or at both these places. The use of the dye for this purpose had been suggested by Prof. Meldola to Prof. S. P. Thompson, and the latter had brought the subject before Section C. It had been suggested that the method might be found generally useful for investigating the course of underground waters, as a very small trace of the dye produced an intense green fluorescence.

Mr. De Rance, who also represented Section C, remarked on the work of the Underground Waters Committee, that its objects were to study underground water with a view to supply from wells and springs. Questions were asked respecting the quality, quantity, and level of the water. The Committee wished for records of water-level extending over long periods of time, and especially to secure old records. The work of the Coast-erosion Committee had been carried on with important results, and much information had been derived from a study of old charts. The Committee on Erratic Blocks, of which Dr. Crosskey was the Secretary, was appointed in 1871 with the object of recording the exact positions of the more important boulders, and of entering these positions on the Ordnance maps. It was important to have a microscopical examination made of sections of chips from the boulders, so that their probable sources might be ascertained. Another point was that the boulders should not be left to the mercy of the stone-breaker, but should be preserved.

Prof. Meldola stated that he had been requested by Dr. Crosskey to thank the Corresponding Societies for the aid they had already given, and to express the hope that their assistance would be continued.

SECTION D.

Phenological Observations.—Mr. Symons introduced this subject, which, he said, might perhaps be considered to have originated with Gilbert White, but received little attention in England until 1874, when the Meteorological Society obtained the assistance of delegates from several Natural History Societies, who held a number of meetings and drew up a Report. Plants, insects, and birds were referred respectively to the Rev. T. A. Preston, Mr. McLachlan, and Prof. Newton. Of plants, 71 species were recommended for observation, of insects 8, and of birds 17. From 1875 to 1878 the Rev. T. A. Preston prepared, and the Royal Meteorological Society printed, annual Reports embodying the results obtained. Mr. Preston finding it impossible to continue the work, Mr. E. Morley took it up and prepared the Report for 1889. On his suggestion the list had now been reduced to 13 plants, 3 insects, and 5 birds, and the Council of the Royal Meteorological Society desired to enlist as many observers as possible, and to obtain the assistance of the Corresponding Societies of the British Association.

A discussion ensued as to the suitability for observation of the species selected. In concluding it, Mr. Symons said that he had brought the matter forward more as a meteorologist than as a naturalist, and he thanked the delegates for their suggestions.

SECTION E.

Teaching of Geography in Elementary Schools.—Mr. Sowerbutts said that he had undertaken to draw up for Section E a Report on this subject with reference to the action of local authorities, in order to make known how far the Government grant for technical education or allied purposes was made use of for the teaching of geography, and he asked the delegates to assist him by sending in School Board Reports, &c.

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[1] The Committee, consisting of Mr. Symons (Chairman), Prof. Meldola, Mr. Hopkinson, and Mr. Clayden (Secretary), was duly appointed, with a grant of £5.

SECTION H.

Committee of Aid for Anthropological Excavations.—Dr. Garson called attention to the existence of a Committee of Aid formed by the Anthropological Institute for the purpose of aiding by direction or otherwise the exploration of ancient remains, the Chairman of this Committee being General Pitt-Rivers, the Inspector of Ancient Monuments. Local societies, he said, would find it to their advantage if they would report to this Committee when they were desirous of undertaking explorations.

Prehistoric Remains Committee.—Mr. J. W. Davis said that this Committee, of which he was Secretary, wanted a record of everything that had reference to prehistoric man, his dwellings, implements, pottery, &c.

A discussion then took place with reference to the best method of imparting to the Corresponding Societies through their delegates a knowledge of what had taken place at the Conferences. Mr. Hopkinson suggested that each delegate should read a paper before his Society, giving an account of the work taken up by the various Committees, and that this paper should be published by that Society, so as to be accessible to every member of it. He distributed amongst the delegates a paper on the work of the Committees of the Association which he had brought before the Hertfordshire Natural History Society. Another question raised was the advisability of in some way bringing into relationship with the British Association certain societies which did not come up to the standard of excellence requisite for enrolment as Corresponding Societies.

On the motion of Prof. Lebour, seconded by Mr. J. W. Davis, a vote of thanks was passed to Mr. Symons, Chairman of the Conference, and to Prof. Meldola, Secretary.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—Mr. Love, Fellow of St. John's College, has been elected Chairman of the Examiners for the Mathematical Tripos, Part I.

Prof. Darwin, Prof. J. J. Thomson, Mr. Pendlebury, St. John's, and Mr. Lachlan, Trinity, have been appointed Examiners for the second part of the Mathematical Tripos.

Mr. E. A. Parkyn, Christ's, and Mr. M. C. Potter, Peterhouse, have been appointed Lecturers in Science at affiliated lecture-centres.

Scholarships and Exhibitions in Natural Science will be open for competition to non-members of the University in December and January next at the following Colleges: King's, Jesus, Christ's, St. John's, Trinity, Emmanuel, and Sidney Sussex (see *Cambridge University Reporter*, November 18, 1890, p. 237).

SOCIETIES AND ACADEMIES.

LONDON.

Royal Meteorological Society, November 19.—Mr. Baldwin Latham, President, delivered an address on "The Relation of Ground Water to Disease." The pages of history show that when the ground waters of our own or other countries have arrived at a considerable degree of lowness, as evidenced by the failure of springs and the drying up of rivers, such periods have always been accompanied or followed by epidemic disease. In all probability ground water in itself, except under conditions where it is liable to pollution, has no material effect in producing or spreading disease. As a rule, it is only in those places in which there has been a considerable amount of impurity stored in the soil that diseases become manifest, and the most common modes by which diseases are, in all probability, disseminated, are by means of the water supplies drawn from the ground, or by the elimination of ground-air into the habitations of the people. It is found that the periods of low and high water mark those epochs when certain organic changes are taking place in the impurities stored in the ground, which ultimately become the cause and lead to the spread of disease. Mr. Latham defines "ground water" as all water found in the surface soil of the earth's crust, except such as may be in combination with the materials forming the crust of the earth. It is usually derived from rainfall, by percolation; and it is also produced by condensation. In dry countries, ground water is principally supplied by the infiltration from rivers, as, for example, in the Delta of the Nile. The absence of water passing into the ground for a long period naturally leads to the lowering of the free ground water-line, and may lead to the drying of the ground above the water-line; and it is curious to note, with reference to small-pox, that the periods marking the epochs of this disease are those in which there has been a long absence of percolation, and a consequent drying of the ground preceding such epidemics. On the other hand, small-pox is unknown at such periods as when the ground has never been allowed to dry, or is receiving moisture by condensation or capillarity. The study of underground water shows that certain diseases are more rife when the water is high in the ground, and others when the water is low. The conditions that bring about and accompany low water, however, have by far the most potential influence on health, as all low water years are, without exception, unhealthy. As a rule, the years of high water are usually healthy, except, as often happens, when high water follows immediately upon marked low water, when on the rise of the water an unhealthy period invariably follows. Mr. Latham has found that those districts which draw their water supplies direct from the ground, are usually more subject to epidemics and disease than those districts in which the water supply is drawn from rivers supplied from more extended areas, or from sources not liable to underground pollution. In the case of Croydon, one portion of the district (under three-fourths) is supplied with water taken direct from the ground, whilst the remaining portion is supplied with water from the River Thames. It is curious to note that even so recently as 1885 the zymotic death-rate in the districts supplied with underground water was twice as great as in that part of the district supplied from the Thames; and in this particular year forty-one deaths from small-pox occurred in the district, not one of which was recorded outside the district supplied by the underground water. Mr. Latham, in his address, dealt largely with zymotic diseases as affected by ground water, and showed that cholera ordinarily breaks out when there is the least ground water; a high air and ground temperature is also necessary for its development, and as a rule the low-lying districts are favourable to the production of these high temperatures. Small-pox is almost always preceded by a long period of dryness of the ground, as measured by the absence of percolation. Typhoid fever is most prevalent after a dry period and the first wetting of the ground or percolation from any cause taking place. The condition essential to the development of diphtheria is a damp state of the ground marked by extreme sensitiveness to percolation of rain. Scarlet fever follows the state of the dryness of the ground, which is essential for its development, and it occurs in the percolation period. The conditions that precede small-pox are those favourable for the development of scarlet fever, and, like small-pox, the dampness of the ground for any considerable period in any particular locality, may check its development or render it less virulent, and it is most rife in low water years. Measles are least prevalent at the low water periods, and mostly rife at and near high water periods. Whooping-cough follows the percolation period in its incidence, increasing with percolation, and diminishing as the waters in the ground subside. Diarrhœa is generally more prevalent in a low water year than in other years; that is, with a very much colder temperature in a low water year there is a very much higher death-rate from this disease. Mr. Latham finds that the general death-rate of a district is amenable to the state of the ground water, years of drought and low water being always the most unhealthy.

Geological Society, November 12.—Dr. A. Geikie, F.R.S., President in the chair.—The President referred to the sad loss the Society had sustained since the last meeting, through the death of the late Foreign Secretary, Sir Warington W. Smyth, F.R.S.—The President reported that Mr. L. Belinfante had been temporarily appointed by the Council to the office of Assistant-Secretary.—The following communications were read:—On the porphyritic rocks of the Island of Jersey, by Prof. A. De Lapparent, Foreign Correspondent of the Society. (Communicated by the President.) The author had some years ago described as Permian a series of porphyritic rocks, of which specimens had been sent to him from Jersey. He had since been led to believe that this view of their age, arrived at from what he knew of similar rocks in France, was erroneous, and in a recent visit to the island had satisfied himself that the English observers who had assigned to these rocks a much higher antiquity were in the right. He now found that